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ABSTRACT

In developing a vision of schools capable of responding effectively to their challenges to change, futurists and reformers must solve two closely linked problems inherent in their positions. One problem is the risky business of predicting the future social and economic consequences of present trends; the other is the improbability of accurately and precisely specifying the characteristics of schools adapting to such consequences. The concepts of the "learning organization" and "organizational learning" (OL) provide a potential framework for solving the two problems. This paper reports on research, conducted as part of a 5-year study of policy implementation in British Columbia, which described the school conditions that foster and inhibit organizational learning. Data were collected from interviews with a total of 72 teachers and 6 principals in 6 schools located in 4 British Columbia school districts. The schools were selected to represent a broad spectrum of potential school organizations: one primary, one elementary, a junior secondary, two secondary, and one senior secondary school. The OL framework includes five sets of variables: stimulus for learning, organizational learning processes, out-of-school conditions, school conditions, and outcomes. Findings indicate that: (1) organizational learning processes are highly varied; (2) district contributions to OL in schools are underestimated; (3) a coherent sense of direction for the school is crucial in fostering organizational learning; and (4) sources of a school's coherent sense of direction are not obvious. Four tables and one figure are included. Contains 21 references. (LMI)

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An Organizational Learning Perspective On School Responses To Central Policy Initiatives

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An Organizational Learning Perspective On School Responses To Central Policy Initiatives

Like members of most contemporary organizations, educators are swamped with arguments for why they must change. Futurists point to current trends in society-at-large that portend enormous consequences for the design of future schools (e.g., Naisbitt & Aburdene, 1985). Reformers offer images of what future schools might look like were they to respond seriously to these trends (e.g., Schlecty, 1990; Perkins, 1992; Dixon, 1992). In developing a vision of schools capable of responding effectively to their challenges to change, two closely linked problems inherent in the positions adopted by these futurists and reformers must be solved. One problem is the risky business of predicting the future social and economic consequences of present trends; the other is the improbability of accurately and precisely specifying the characteristics of schools adapting to such consequences.

Centrally generated initiatives to restructure schools like those evident in many countries, at present, are the products of efforts by policy makers to solve these problems. These initiatives, however, invariably stop short of providing a comprehensive vision of a school successfully embodying solutions to these two problems. The "learning organization", is one promising vision for future schools and "organizational learning" a promising perspective on the processes for getting there.

Envisioning future schools as learning organizations does not require exceptional accuracy in predicting consequences for the future of current trends. That schools will continue to face a steady stream of novel problems and ambitious demands is the only prediction required. These demands and problems most certainly will generate considerable pressure to learn new and more effective ways

of doing business. This is a pretty safe bet. Indeed, it is a bet that a great many non-school organizations are prepared to make as they attempt to reinvent themselves. Vivid testimony to this claim is to be found in the remarkable following enjoyed by some of the more recent, popular accounts of the learning organization (Senge, 1990; Watkins & Marsick, 1993). And while the nature of this following raises the specter of a quickly passing fad, the long-standing and distinguished literature on organizational learning within the domain of organizational theory argues otherwise (e.g., Levitt & March, 1988; Hedberg, 1981; Argyris & Schon, 1978).

Research described in this paper is part of the most recent phase of a five year longitudinal study of policy implementation in the Canadian province of British Columbia (Leithwood et al, 1994; 1993; 1991; 1990). Since 1989, the government in that province has been pursuing initiatives originating from a Royal Commission report aimed at the comprehensive restructuring of schools. In the B.C. context, "restructuring" encompasses changes in such aspects of schooling as curriculum, assessment, attention to diverse student needs, classroom and school organization, teacher development, the role of school leaders, relations with parents, and links with the wider community and with post-secondary educational institutions (e.g., B.C. Ministry of Education, 1989).

Among the objectives in all phases of this research has been an attempt to account for variation among schools in the nature of their response to these central policy initiatives, and the degree to which their responses have been productive. In some phases of this research, "productive" has been defined as a function of the extent to which policy initiatives have been implemented (Leithwood et al, 1990, 1991); in other phases "productive" has been judged, more fundamentally, in terms of student outcomes (achievement, participation and identification) (Leithwood et al, 1994). Results of previous phases of the research increasingly have directed attention toward individual and collective learning processes ("organizational

learning" or OL) as explanations for variation in the productivity of school responses. School leadership has emerged as an important explanation for variation in OL. Accordingly, this phase of the study was designed to more fully explore the causes and consequences of OL in schools and to discover those leadership practices which contribute to such learning. Our evidence concerning school leadership is only alluded to briefly in this paper.

Subsequent sections of the paper describe the framework used to guide our inquiry about OL in schools and, outline our research methods, results, and conclusions. Because schools have rarely been examined from an OL perspective, we consider the major contribution of the paper to be a description of the conditions found in schools which foster and inhibit organizational learning: touched on only lightly are the processes of organizational learning.

Framework

Fiol and Lyles suggest that:

> Organizational learning means the process of improving actions through better knowledge and understanding (1985, p. 203).

A "learning organization" we have defined as:

> ... a group of people pursuing common purposes (individual purposes as well) with a collective commitment to regularly weighing the value of those purposes, modifying them when that makes sense, and continuously developing more effective and efficient ways of accomplishing those purposes (Leithwood & Aitken, in press, p. 63).

There is an extensive literature (see, for example, Cousins, in press) on OL in non-school organizations. Elsewhere we have used this literature to develop the framework used for this study (Leithwood et al, 1994; Leithwood & Aitken, in

press). Our description in this section of the paper is limited to a brief definition of the five sets of variables included in the framework:

- *Stimulus for learning:* some felt need (e.g., to respond to the call for implementing a new policy), or perception of a problem, prompted from inside or outside the organization that leads to a collective search for a solution.
- *Organizational learning processes:* processes used by individuals and groups within the school (e.g., informal discussion of new ideas; personal reading) to make sense of their environment and to master the challenges posed by that environment, and those mechanisms (e.g., workshops, staff meetings) used by organizational members for such sense-making and problem solving.
- *Out-of-school conditions:* initiatives taken by those outside the school (e.g., Ministry personnel, district staff), or conditions which exist outside the school (e.g., economic health of the community) that influence conditions and initiatives inside the school. In this study, the school's history, the Ministry of Education, the local school community and the school district were included as part of the construct. Also included was a transformational conception of school leadership (Leithwood, 1992; 1994), conceptualized as "outside" the school only because we had a special interest in its effects on in-school conditions.
- *School conditions:* initiatives taken by those in the school, or conditions prevailing in the school which either foster or inhibit organizational learning. In this study such initiatives and conditions were associated with the school's mission and vision, school culture, decision-making structures, strategies used for change, and the nature of school policies along with the availability and distribution of resources.
- *Outcomes:* the individual and collective understandings, skills, commitments and new practices resulting from organizational learning on the part of school

staffs. These outcomes are assumed to mediate the effects of the school on student growth.

Guided by this framework, the study inquired about five sets of questions. The first set of questions concerned the stimuli for learning. What sorts of internal dispositions (on the part of individuals) or external events trigger organizational learning? Are policy initiatives by the Province and by districts among these triggering events? And how do such "official" initiatives compare with other types of initiatives in their power to stimulate OL?

A second set of questions was about out-of-school conditions directly or indirectly effecting OL. What sorts of conditions outside of schools have a bearing on OL in schools? In particular, what is it about school districts, local school communities and the Ministry of Education that fosters or inhibits OL in schools? What would be the characteristics of such an "external environment" which unambiguously nourished the development of schools as learning organizations?

The attributes of schools that foster OL was the focus of a third set of questions. What do schools look like when they are behaving like learning organizations? Specifically, what is it about a school's vision, culture, structure, strategies, and policies and resources which gives rise to or detracts from OL?

A fourth set of questions was about OL itself. What individual and collective processes account for OL? How can collective and individual learning processes be distinguished?

Finally, to be worth our continuing attention, OL must result in something consequential for schools. Does it? What are the consequences or outcomes? Specifically, what individual and collective understandings, skills, commitments, and overt practices result from OL in schools?

Methods

Sample

The primary source of data for the study were semi-structured interviews conducted in 6 schools located in four districts. These schools were selected as promising sites of organizational learning from two sources of evidence: participation in one or more earlier phases of this research (four schools), and a reputation among two or more district staff as a school successfully engaged in substantial restructuring (two schools). The cases also were selected to represent a broad spectrum of potential school organizations: one primary, one elementary, a junior secondary, two secondary, and one senior secondary school.

Principals in each school were asked to nominate up to 12 teachers who would be willing to be interviewed; nominees were to be broadly representative of the staff with differences in curricular areas taught, years of experience, and gender reflecting the variety of experience and expertise within the school. A total of 72 teachers and 6 principals were interviewed for this study; teacher interviews took about 50 minutes and the principals about 90 minutes.

In addition, 74 teachers in these schools (not necessarily the same teachers who were interviewed) completed a survey measuring components in the conceptual framework guiding the study. Responses to the survey are not reported in this paper.

Instruments

Data were collected using an interview instrument entitled *Processes of Organizational Learning Interview*. This instrument, which consisted of 28 questions, requested information on all components in the conceptual framework. For each question, the interviewer asked various follow-up probes, as necessary, to ensure as much information as possible. For example, teachers were asked what

they had recently been trying to accomplish that involved others in the school. They were subsequently asked what things they needed to learn to accomplish those goals and how the learning occurred. Both teacher and principal versions of this instrument were used.

Data Analysis

Interview data from the 72 teachers and 6 administrators were tape recorded and transcribed. The first stage of analysis consisted of identifying idea units corresponding to the categories in the detailed conceptual framework described in the framework section of this paper. The research team jointly coded one entire transcript to help in developing the list of potential codes. After the coding list was compiled, three trained analysts, none of whom were the interviewees (to maintain objectivity), worked together on 12 transcripts to arrive at a common understanding of how each statement should be coded. To determine reliability, the three analysts subsequently coded five additional transcripts independently. Agreement ranged from 71% to 83% with a mean score of 75%; discrepancies in judgement were resolved through discussion. Finally, the three analysts independently coded the remaining transcripts, consulting each other frequently to resolve dilemmas. A total of 4029 individual idea segments were coded.

As a second stage of analysis of the interview data, whenever teachers made explicit links or associations among two or more individual codes, such excerpts were pulled from the transcripts using the HyperQual2 software for qualitative analysis. Summaries were then made of the number of teachers who had made associations between the major sets of variables being studied and the number of different connections that were made within each school. Because the number of teachers varied among the schools, an average number of association per teacher was calculated to allow comparison of schools.

The total number of associations coded was 1241; this number may have underestimated the actual linkages made between variables within the schools. Because this was a new method of analysis for us, coders tended to be conservative in making assumptions about associations if teachers were not explicit in their responses. If associations were under reported, such would be the case across all case schools; no individual school would have been treated differently for the analysis of variable associations.

Results

This section reports evidence from interviews in response to each of the five sets of questions addressed by the study. Special attention is devoted to evidence of associations or reported cause and effect relationship among the five constructs in the framework.

Events and Dispositions Which "Trigger" OL

> *In one sense we're having to change to meet our new clients. Some of these kids that are now coming up into grade 9 had been at a middle school where some of the facets of the Year 2000 have been in place. For example, student conferencing, portfolios, students who have been involved with evaluating themselves, students who have had more control over what they are studying. While those kids are now only in grade 9, I think there's been a gradual movement to where some of the staff are starting to think about it more seriously.*

Interviews with teachers identified a total of 13 stimuli for their learning. These are listed below in the order of frequency of mention, with the last 4 on the list mentioned by only 3 teachers each.

- new Ministry programs
- desire to remain current, or to improve one's practices

- desire to do what is best for student needs
- new programs being implemented within one's own school
- district policy initiatives
- changes in student body (e.g., new ethnic groups, special needs students)
- desire to move in same direction as colleagues
- compatibility of new programs with personal goals/teaching style
- encouragement to implement changes by school administrators
- personal experience teaching other subjects or in other jurisdictions
- introduction to new ideas about schools by teacher professional groups
- change in teaching assignment
- changed expectations for teachers beyond academic concerns

These stimuli are both external and internal in nature with external, "official" sources of OL prominent among them.

Explicit associations. Teachers explicitly associated these stimuli with OL in all schools. The mean number of associations across schools per teacher indicate that about the same number of stimuli were associated with collective as with individual learning. However, that pattern varied among schools: teachers in schools 1, 4, and 6 associated stimuli almost equally with individual and collective learning, whereas teachers in schools 2 and 5 associated stimuli more frequently with individual learning. School 3 was an exception in two ways: teachers associated stimuli more with collective learning and all associations were with such vehicles for learning as workshops and district committees. Across all schools, only 2 examples were provided of stimuli negatively associated with learning.

Summary. What stimulates OL in schools? Quite a few things have such potential and schools appear to vary in their sensitivity to these stimuli. This may well be a function of their missions and visions - some more open to Ministry initiatives than others, for example. Some school cultures also may foster an

openness to ideas from other schools or from one's own colleagues. OL can be stimulated by relatively everyday events; ongoing attempts at incremental improvement and the like. It does not require a crisis.

Out-of-School Conditions Which Influence OL

> *This district has been big on kind of giving teachers new tools that have come out over the last few years. They spent thousands of dollars, probably three or four years ago, with many in-service sessions that anybody was welcome to. I think this District has done a fairly good job of helping teachers to change in their teaching methods.*

Three sets of factors are identified in the framework as likely to influence learning directly or indirectly; history, environment, and leadership. Detailed results reported in this paper are limited to the environment. Leadership is addressed in a separate paper (Leithwood et al, 1994) and history was not measured in this phase of the study. Further, the meaning of "environment", in this phase of the study, is restricted to the school district, the local school community, and the Ministry of Education. Table 1 lists all of the school district conditions, identified by interviewees as having some direct or indirect effect on OL. Little distinction was evident in the data between conditions which effected individual as distinct from collective learning.

The *missions and visions* of school districts were potentially fruitful sources of learning for school staffs. But to realize this potential, such visions had to be well understood, meaningful and accessible. To foster organizational learning in schools, district visions and missions also had to engender a sense of commitment on the part of school staffs. When these conditions were met, and when district visions acknowledged the need for continuous professional growth, teachers and administrators used the visions as starting points and frameworks for envisioning more specific futures for their own schools; in effect, establishing the long term

goals for their own professional learning. Widely shared district missions and visions, furthermore, sometimes provided filters for screening and evaluating the salience of external demands for change. Also, they served as non-prescriptive clues about which initiatives, taken by schools, would be valued and supported by district personnel.

"Collaborative and harmonious" captures much of what was considered to be important about district *cultures* when they contributed to OL. Rather than a "we-they" attitude, perceived to promote hostility and resistance toward district initiatives, learning appears to have been fostered by a shared sense of district community. This sense of community was more likely when there was interaction with other schools (e.g., feeder schools), and when disagreements in the district were settled in ways perceived to be "professional". District cultures fostered OL also when the need for continuous change was accepted, and when new initiatives clearly built on previous work rather than being discontinuous with such work.

District *structures* fostered OL when they provided ample opportunity for school-based staff to participate in shaping both district and school-level decisions. Participation in district decisions teaches those involved about the wider issues faced by the district and those influences not readily evident in schools that are, nevertheless, germane to district decisions. Considerable delegation of decision making to schools (possibly through site-based management) enhanced opportunities for improving the collective problem-solving capacities of staff. Such decision making also permitted staff to create solutions which were sensitive to important aspects of the school's context. Evidence suggests that multiple forums for participation in district decision making were helpful.

To foster learning, it was perceived to be useful for districts to use many different *strategies* for reaching out to schools - through newsletters, workshops, informal lines of communication and the like. Especially influential, according to

teachers, were strategies with teaching as their explicit purpose: workshops and mentoring programs were identified as examples by interviewees, as were specific change initiatives designed to assist in achieving district goals and priorities. Strategies which buffered schools from excessive turbulence or pressure from the community also were identified as helpful for learning.

District *policies and resources* identified as promoting learning included the provision of release time for planning and for professional development, especially when these resources could be used in flexible ways. Access to special expertise or "technical assistance" in the form of consultants and lead teachers, for example, also was claimed to foster learning although teachers reported that such resources were, by now, quite scarce ("in the past" they had been quite useful). One means identified for creating a critical mass of expertise about a focus within the school from which others could learn was to ensure that more than one participant from a school attended inservice events. In districts which had professional development libraries or central resource centres, teachers cited them as significant aids to their professional learning.

Interview data also identified those conditions provided by the local school community and the Ministry of Education, that fostered either individual or collective learning. With respect to the *community*, parental agreement with the school's direction and practices, an atmosphere that welcomed parents into the school, and active participation of parents in the school were noted as fostering learning in some way. Several schools were experiencing a rapid influx of students from different countries and cultures. These demographic changes in the student population created significant challenges to staffs to alter their programs, to find resources for ESL instruction, and to learn about the consequences of students' backgrounds for classroom practices. Changes in the socio-economic status of the student population required staffs to learn more about resources available to

students and families from social service agencies and how to assist students in gaining access to these resources.

Financial support along with curriculum and other resource documents were identified as aids to learning provided by the *Ministry*. The Ministry also fostered learning through its sponsorship of an action research project in which a number of interviewees had participated. Coherent policies, consistent approaches to their implementation, and sustained commitment to those policies were identified as important conditions for OL in schools that the Ministry had *not* consistently provided, according to those interviewed.

Explicit associations. District, Ministry and community factors were associated with OL at least once in all schools. On average, 0.9 associations were made to collective learning and 0.6 to individual learning. All but one school reflected these averages; in the exceptional school, all three sets of factors were associated with both forms of learning equally. On average, most of the associations with OL came from the district (mean = 1.1). A small number of associations were made with the Ministry (0.3) and almost none with the community (0.1).

While associations with OL were made with all five components associated with the district, *resources and policies* was the component most frequently associated with learning (average links = 0.6): most of the impact on OL was attributed to the allocation of resources for professional development days or provision of support personnel. Some teachers in school 5, the least influenced by district conditions, described the school as isolated from the district with minimal support for professional development to help them with their current initiative. *Structure* was next most frequently associated with OL (a mean frequency of 0.3); *culture* and *strategy* were even less frequently associated with OL (mean frequencies of only 0.1). District *vision and mission* was least likely to be associated with OL, receiving only one mention across all schools.

Staff members in school 1 were unique in reporting the highest frequency of associations between their learning and the Ministry (3 times the mean). These teachers associated the Ministry with their learning slightly more frequently than with the district. This reflected their experience in past years as a "lead" school implementing Ministry programs and their considerable use of Ministry materials as resources for their professional learning. School 1 was well below the mean (and ranked fifth among the schools) on district associations with learning not surprising, perhaps, given the perception which they shared that most of their learning currently occurred within the school.

Teachers in only two schools directly associated OL with the community; most community influence on OL was indirect through school conditions.

Most district, Ministry and community conditions were positively associated with learning processes. Schools 1 and 2 teachers cited only positive associations; teachers in most other schools mentioned only a few negative associations and these were equally divided between the district and Ministry.

Finally, district, Ministry and community conditions also were associated with OL indirectly through school conditions. The average frequency was 1.4 associations per teacher (0.6 from district, 0.6 from community and 0.2 from the Ministry). District conditions were associated with all categories of school conditions, although the distribution varied among schools. District conditions had the greatest impact on *resources* in two schools, on *structure* in another, and on *strategy* in two schools. Negative associations from the district were focused primarily on lack of school resources, problems in school structure or decision making, and the weakening of school culture. The school in which teachers reported the largest number of positive associations with district conditions was located in a district which had recently given high priority to teacher professional

development. Teachers in this school also most frequently mentioned the association between district conditions and OL.

Community conditions influenced learning mostly through school *culture*, as teachers identified the impact of the community on the nature of their students and how that affected the content of their culture. In a few schools, community conditions were associated with school *structure* as members of the community became more active in school decision making. There was also some talk about how fund-raising by the community enhanced the *resources* for the school, bringing about new practices in classrooms. The limited evidence about Ministry conditions associated them with most school conditions.

Summary. Of the three sets of out-of-school conditions directly or indirectly associated with OL, district conditions clearly predominate; Ministry conditions were identified many fewer times and community conditions rarely. Among district conditions, greatest influence seemed to be exercised through district policies and resources, especially professional development resources. There was considerable variation among schools in the district, community, and Ministry conditions to which they were sensitive.

[insert Table 1 about here]

Characteristics of Schools as Learning Organizations

> *Informally, we do a lot of sharing in this school. The two teachers who are really working with the computer lab have been very generous in sharing their time and expertise, and getting us in there and getting hands-on, answering as many questions as they can, and making it easy for us as possible to work with the children. The PE people have shared, anybody who's been away at a workshop and picked up something that they think the rest of us would enjoy, certainly have shared the information. And I think just generally people who go away to things and come back share the materials*

> *around. We don't tend to have closed doors in this school, which is really nice ... we're all in it together.*
>
> *This school is very involved in professional development. That's really been a benefit to me. I have lots of professional development available to me. We have an X block one day a week on Tuesdays where we do our own professional development. We can meet with each other and I can get ideas from other teachers which I really find beneficial.*

Teachers identified attributes of schools which they believed either fostered or inhibited some form of individual or collective learning on their part (Table 2). As in the case of district vision and mission, school *vision and mission* was associated with OL when it was clear, accessible and widely shared by staff. To have this association, school vision had to be perceived by teachers as meaningful; it also had to be pervasive in conversations and decision making throughout the school.

Also paralleling conditions at the district level, school *cultures* fostered learning when they were collaborative and collegial. Norms of mutual support among teachers, respect for colleagues' ideas and a willingness to take risks in attempting new practices were all aspects of culture that teachers associated with their own learning. Some teachers indicated that receiving honest, candid feedback from their colleagues was an important factor in their learning. Teachers' commitments to their own learning appeared to be reinforced by shared celebrations of successes by staff and a strong focus on the needs of all students. Collaborative and collegial cultures resulted in informal sharing of ideas and materials among teachers which fostered OL, especially when continuous professional growth was a widely shared norm among staff.

For the most part, school *structures* believed to support professional learning were those which allowed for greater participation in decision making by teachers. Such structures included: brief weekly planning meetings; frequent and often

informal problem-solving sessions; regularly scheduled professional development time in school; and common preparation periods for teachers who needed to work together. Other structures also associated with learning were the cross-department appointment of teachers and team teaching. When decisions were made by staff through consensus, something easier to do in smaller schools, more learning was believed to occur. The physical space of schools had some bearing on teachers' learning, when it either encouraged or discouraged closer physical proximity of staff.

Clarifying short-term goals for improvement, and establishing personal, professional growth goals were cited by teachers as school *strategies* that aided in their learning. This learning was further assisted when school goals and priorities were kept current through periodic review and revision and when there were well-designed processes for implementing those specific program initiatives designed to accomplish such goals and priorities. Schools fostered OL when they were able to establish a restricted, manageable number of priorities for action and when there was follow-through on plans for such action.

Teachers reported that sufficient *resources* to support essential professional development in aid of their initiatives was a decided boost to their learning. Within their own schools, teachers used colleagues as professional development resources, along with professional libraries and any professional readings that were circulated among staff. Access to rich curriculum resources and to computer facilities aided teachers' learning, in their view, as did access to technical assistance (consultants, etc.) for implementing new practices. Teachers also noted that access to community facilities helped them to learn.

Explicit associations with OL. Teachers in all schools, with the exception of school 5, made two or more associations between school conditions and OL. The number of associations per teacher between school conditions and collective

learning ranged from a high of 5.3 in school 1 to a low of 0.9 in school 5. Fewer references by teachers associated school conditions with individual learning; the range was from 1.9 in school 2 to 0 in school 5. *Culture* was the only category of school condition referred to by teachers, at least once on average, as related to collective learning. Least likely to be associated with learning was school *vision* - the exception being school 6. In this school there was consensus about the vision among staff, at least in part due to emphasis having recently been given to creating a common vision. That process, teachers reported, did influence their learning. For similar reasons, *strategy* was associated with learning in school 1. This school engaged in systematic and authentic goal setting in a way that fostered professional development, according to teachers.

Surprisingly, teachers made few explicit associations between school *resources* and either collective or individual learning. This could be interpreted as evidence of the current lack of resources to support teacher learning (there were some negative associations between *resources* and OL). But teachers in school 1, for whom professional learning appeared to be an ongoing priority, also made no explicit associations between *resources* and learning. On the other hand, school 2, in which one such association per teacher was reported, recently had received extra funding for their involvement in the school accreditation process (a school evaluation process sponsored by the province). This was reported to foster learning through collective reflection on school priorities. Thus, in one case *resources* were explicitly associated with OL and in another, it was not.

School conditions inhibiting OL were reported in 5 schools, school 1 being the only exception. Associations in schools 3 and 6 were almost all positive, whereas schools 2, 4 and 5 were well above the overall mean frequency of 0.3 in negative associations reported. In school 2, negative associations between *structure* and *resources* were reported; in school 4 all categories of conditions except *vision* were

associated negatively, as well as positively; and in school 5 the negative association came from *culture* (reflecting an increase in teacher isolation in the year of the study) and from *structure* (a new timetable and a perceived lack of authentic consultation).

Explicit associations with outcomes. Some teachers associated school conditions directly with outcomes, leaving implicit the necessary mediation of their own learning processes. Variation among schools was considerable, ranging from a low of 1.2 associations in school 6 to a high of 2.8 associations in schools 2 and 4. Overall, school *culture*, *structure* and *strategy* were cited with almost the same frequency (approx. 0.5). *Resources* was cited about half as frequently and *vision* was associated with outcomes in only a few cases.

Teachers in school 1 reported the most associations between school conditions and learning, as well as between learning and outcomes; they also reported fewer than average direct associations between school conditions and outcomes: OL may have been such an integral component of professional life in this school that teachers were more aware of the direct impact of learning on their practices. Results for school 6 were similar (although lower) to school 1 results, with respect to the associations between school conditions and learning and between learning and outcomes. This was not the pattern in school 2. Teachers reported a higher than average frequency of associations (5.3) between school conditions and learning. These teachers also reported above average numbers of associations between school conditions and outcomes. The existence of some turbulence in school 4 is evident in the relatively high number of reported associations (2.8) between conditions and outcomes. At the same time, teachers in school 4 also reported twice the mean (1.9 vs. 0.8) number of negative associations between school conditions and outcomes. Teachers in school 5 reported a below average number of positive associations between school conditions and outcomes, but an

above average number of negative associations with outcomes. Overall, reports of negative associations between school conditions and outcomes was considerably less frequent than the positive associations reported by teachers with schools 1 and 6 not providing any examples of negative associations.

Summary. Among school conditions, *culture* appears to be the dominant influence on collective learning. *School mission and vision* and *resources* may be less important in fostering OL than commonly is believed to be the case. Both *structure* and *strategy* are associated moderately and about equally with OL, especially collective learning. School conditions as a whole are much more frequently associated with collective than with individual learning.

[insert Table 2 about here]

Organizational Learning Processes

> *This year we were looking at reflection as a group. A teaching partner and myself looked at whether classroom and teacher talk would enhance the reflection and enhance children's growth in the visual arts. We focused on visual arts just because you have to keep fine tuning it way down to small, small pieces. It was quite interesting. It was something I sort of knew, yes, it would but it's interesting to actually break it down and see how it works and then come to realizations of how much more has to be done and all the rest of it.*

Processes through which teachers reported learning are summarized in Table 3. This table distinguishes individual from collective processes. The most frequently mentioned collective process for learning was the exchange of information through informal discussions among colleagues. This occurred when teachers felt comfortable sharing their own learning with others and receiving suggestions for improvement from colleagues. Only in small schools did these exchanges appear to involve whole staffs. More typically, they occurred within smaller groups such as

a grade or department teams. Teachers also reported using a trial and error approach with new practices, perhaps after jointly participating in a workshop or simply on the initiative of a fellow staff member. Experimentation with new practice was considered to be an effective way to adapt current practice after evaluating what needed to be changed. As important as acknowledging and celebrating "what worked" with such experiments was the problem solving that arose in response to perceived failures. In most schools teachers also mentioned working with colleagues to develop new curricula or instructional approaches, a more systematic exchange than informal sharing.

Spending time in each other's classes was another means teachers used for their learning, either casually "dropping in" for conversation or through a more formal process of scheduled observation followed by feedback. In only a few cases, did teachers with expertise in specific areas demonstrate new strategies for their colleagues or were staff meetings used to practice new methods. Other less frequently used processes were collective reflection on school goals, professional reading, and research. Teachers in most schools visited other schools to observe some practice they were about to introduce or were considering for their school.

Individual learning processes reported by teachers focused more on personal reflection, learning from their own personal and professional experience. Teachers also talked about their own experimentation with new strategies and questioning their assumptions about teaching and learning. Professional reading and library research were used by teachers for professional growth. Reaching out to colleagues in other schools was helpful for some teachers, as was observing what instructional methods were effective for members of their own family - their own children, for example.

Explicit associations. On average, teachers made more than three associations between OL and one or more outcomes; collective and individual learning were

equally associated with such outcomes. Variation among schools was significant, ranging from a high of 5.3 in school 1 to 1.8 in school 3. Teachers in schools 1 and 4 more frequently associated outcomes with collective learning than with individual learning; this reflects the talk about constant exchange of ideas in a culture of continuous growth in the first school and the availability of opportunities for joint learning in the second. At the same time, however, evidence from school 4 demonstrated the highest incidence of OL not associated with outcomes for various reasons (e.g., unwillingness of colleagues to implement new strategies, ineffectiveness of a learning activity, lack of opportunities to acquire appropriate knowledge). Teachers in school 3 reported the fewest associations between OL and outcomes, a finding consistent with their low report of school conditions fostering OL. Schools reporting a higher than average number of associations between collective learning and outcomes also reported average to above average numbers of associations between individual learning and outcomes.

Summary. Teachers learned through their informal, daily contacts with other teachers and through reflecting on their own classroom experiments. Organized, formal professional development time also was quite important for them, however, when it directly addressed their own felt needs and when there were opportunities to "socially process" the professional development experience (share it with others in some fashion).

[insert Table 3 about here]

Outcomes of Organizational Learning

> *I've gone from very individual and almost lecture oriented teaching to very student directed and cooperative. That kind of thing. That's been a huge change in my teaching. That's been an evolution of a few years.*

> *There's been lots of changes. I think I've become, I don't know if compassionate is the right word, but more aware that these kids have more to deal with than just school and their lessons and their homework and that kind of thing. I've become more understanding about those kinds of situations as well.*

The outcomes of organizational learning reported by teachers through interviews are listed in Table 4. Most of the outcomes reported were *practices*, followed by *understanding* and *commitment*, with *new skills* a distant fourth. The discussion of new *skills* was mostly about improved teaching techniques, the precise nature of which was not specified. As well, a few teachers said they had acquired better management skills that led to a smoother day-to-day flow in their classrooms. Some teachers said they had acquired new computer skills for use with their classes or had improved their techniques for working with special needs students.

The *new understanding* mentioned most frequently was acceptance of the necessity of meeting the needs of each individual student and the importance of relating to the 'whole' child and not only his/her academic development. Teachers also gained a new awareness of which instructional practices were effective and which were not, perhaps a result of their reflection on current practice as a process for learning. Greater familiarity with a variety of instructional approaches and of reasons for changing approaches were other outcomes, as was an understanding of how learning varies for different students.

Less than 10% of teachers reported other outcomes such as: gaining an understanding of how to relate to immigrant students who came without English-language skills; what made a new program or teaching strategy better for students; how goals helped to focus work; and what influences student learning. Overall, knowledge gained through OL was spread between a broader perspective on technical aspects of teaching and a better understanding of students.

Increased commitment was a third category of outcomes evident in statements reflecting teachers' pleasure that they were enhancing student learning by making it more exciting and authentic. Teachers also showed evidence of professional commitment in their desire to continue professional growth and to do the best work possible. Teachers talked about their preference for new practices or programs over what they had been doing previously and about the excitement of trying new approaches compared with repeating past practice. Some teachers said they had been empowered as professionals with new expertise or by recognition from others. In four schools, individual teachers talked about their commitment to their school and the pleasure they received from being part of that school. Several teachers said they were excited by their school's vision or goals and others talked about their enjoyment of teaching in general or the excitement of exposure to a new idea.

Most teachers provided at least one example of a *new practice* they had implemented over the last few years. Fifty per cent of the teachers indicated they were implementing new practices or updating their practice, although the specific nature of the new practice was not defined. When teachers talked about specific changes, the change most likely to be described was increased use of cooperative learning strategies with their students, an innovation mentioned by one third of the teachers representing all six schools. A general move to a child-centered approach was reflected in examples from all six schools of more active involvement of students in their learning through giving them more choice in the content of their curricula and by redefining the teacher role to be more that of a facilitator.

A more deliberate attempt to address the needs of the whole child was another outcome, as was the attempt to meet individual student needs by individualizing programs, including special needs students, or changing practice to accommodate a new type of student such as was the case in schools with an increase in ESL

students. Some teachers also talked about being more flexible in their practice and more open-ended in their approach to curriculum. More project or group work was used to provide a variety of learning experiences. New evaluation strategies such as greater use of anecdotal reports, student-led conferences, or self evaluation were adopted for compatibility with new programs.

Table 4 lists other examples of new practice identified by less than 10% of teachers, including providing more authentic learning experiences by linking learning directly to the world of work through career preparation programs or more deliberate reference to out-of-school experiences. Subject integration, whole language instruction, use of manipulatives and more emphasis on problem solving in mathematics, and more focus on critical thinking skills and problem solving in general were mentioned as specific areas for change. Overall, the trend in new practices identified by teachers was compatible with the goals of current Ministry programs.

Summary. Of the OL outcomes identified by teachers, the category *new skills* was mentioned least frequently. When mentioned, it usually meant new instructional strategies. *Understandings* arising through OL primarily were of two sorts: a broader perspective on instructional techniques and a better understanding of students.

Increased commitments were reported by teachers to student learning, to their own professional growth and to their schools. New practices reflected a move toward more child-centered and flexible instruction, new forms of student assessment and other practices closely akin to Ministry policy directions.

[insert Table 4 about here]

Summary and Conclusions

While organizational learning is a perspective frequently used to better understand non-school organizations, it has rarely been applied to schools. As a consequence, we have almost no systematic evidence describing the conditions which foster and inhibit such learning in schools. The main purpose of this study was to begin to address that gap in evidence. We did this using interview data from 72 teachers and 6 principals in 6 schools.

Figure 1 displays the framework for the study along with a quantitative summary of results. The numbers in brackets associated with each of the constructs indicates the frequency with which teachers made explicit associations between the two constructs or variables indicated by the arrows. For example, the bracketed numbers to the left of the "District" variable indicate that a positive association was made 61 times, a negative association 6 times, between district conditions and organizational learning. We focus on four conclusions in the remainder of this section.

[insert Figure 1 about here]

Organizational learning processes are highly varied. Evidence suggests that teachers learn through quite informal means from their colleagues and their own individual classroom experiences. As well, however, they learn through such formal structures as scheduled professional development inside and outside the school and visits to other schools. Organizational learning, then, seems to be fostered by a rich menu of opportunities of both a formal and informal nature. Such opportunities will be helpful to the extent that they address problems of acknowledged concern to teachers and under conditions in which there is an opportunity for teachers to socially process the information they encounter.

These conditions for teacher learning, although hardly surprising, are not well reflected in current practice. Professional development opportunities for teachers often focus on issues or problems identified by people other than teachers and, frequently occur in ways that leave teachers isolated in their subsequent efforts to make sense of what they learn for purposes of their own practice.

District contributions to organizational learning in schools are underestimated. Evidence from the larger study indicates that school principals are significantly influenced by district-level decision making. But beyond this, our data show what, for some, may be a surprising amount of influence exercised by districts on the organizational learning of teachers themselves. This, of course, was not the case in all schools. What seems to be critical in order for districts to have such influence are their professional development policies and resources. Districts provide opportunities for teachers through the inservice they make available. That is an important first step in their influence on teachers.

When districts also have policies which help ensure the social processing of new ideas, this further contributes to districts' influence on organizational learning in schools. For example, two of the schools in our study belonged to districts in which attendance at district workshops by pairs of teachers or teams of teachers from individual schools was encouraged. Teachers viewed that practice as a significant element in their making sense of the new ideas presented to them during such professional development.

A coherent sense of direction for the school is crucial in fostering organizational learning. This study provided several examples of schools in which teachers believed they had a relatively clear understanding of the general direction in which the schools were headed, and other examples in which there was little such sense of direction. Schools with a coherent sense of direction eventually were able to make sense of even relatively large numbers of disparate initiatives undertaken within the

school, as is often the case in larger schools. But equally large schools without a coherent sense of direction eventually appeared to be "spinning their wheels" in spite of many creative initiatives. The amount of organizational learning that took place in these schools seemed minimal even though individual teacher learning might have been significant.

It seems possible, then, for a school to operate much of the time in a relatively balkanized manner and still make progress in terms of its organizational learning providing staff members share some sense of overall purpose for the school.

Sources of a school's coherent sense of direction are not obvious. Neither the vision-building activities of school leaders nor the school's mission and vision, as it was defined in this study, appeared to stimulate significant OL. Even the apparently most effective school leaders we studied, for example, were not identified as spending much time articulating or building an explicit school mission or vision. But there were other less obvious sources of a coherent sense of direction in this school, including goal-setting strategies that the leader often initiated focused on shorter-term directions for the schools. Other sources of direction included the school culture and a coherent set of practices engaged in by leaders which modelled at least the leader's vision of what the school should become.

This study provides a quite detailed picture of the causes and consequences of organizational learning in schools. It has identified the specific processes that teachers use for their own collective and individual learning. And this is an important first step in a program of research aimed at testing the power of an organizational learning lens to explain variation in school restructuring success. Of course, evidence from six schools hardly provides the "final word" on the causes and consequences of OL in schools, so comparable efforts in many more and varied schools is an important step for future research. However, the "shape" that OL

takes in schools may now be sufficiently visible to initiate, in parallel, the fundamental task of assessing the effects of OL on student growth. Do variations in the processes and outcomes of organizational learning explain significant variation in student effects? The case that it ought to is theoretically compelling: as yet, there is no empirical evidence that it does.

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Table 1

District Conditions Fostering Organizational Learning in Schools

District Vision and Mission
- includes a commitment to life-long learning
- clear and accessible to most staff
- shared by most staff

District Culture
- collaboration with other schools considered valuable
- extensive interaction with feeder schools is supported by most
- disagreements settled "professionally"
- harmonious relations between school and the district staffs
- school staff identify strongly with the district
- sense of community widely shared by school and district staffs
- incremental (vs. discontinuous) approach to change condidered best
- continuous change accepted as normal and necessary
- continuous professional learning is a widely accepted norm

Structure
- teachers participate in district decisions affecting their work, often through district committees
- organization of subject meetings
- active district teachers' association
- open school board meetings
- extensive opportunities for school-based decision making

Strategy
- district newsletter distributed
- district workshops provided to meet teacher needs
- district goals available to help frame school goals
- two-way lines of communication developed
- district mentoring program provided to new teachers
- active initiation of changes to meet district goals
- opportunity for schools to modify and adapt district decisions
- buffers schools from excessive turbulence or pressure from the community

Policy and Resources
- release time for joint planning and pro-d is funded
- flexible use of pro-d funds encouraged
- encourage more than one teacher per school to attend district in-service
- technical assistance provided for school change efforts
- least restrictive employment contracts
- provision of a district resource centre
- multiple teachers from same school encouraged to attend workshops

Table 2

Characteristics of Schools as Learning Organizations

School Vision and Mission
- clear and accessible to most staff
- shared by most staff
- perceived to be meaningful by most staff
- pervasive in coversation and decision making

School Culture
- collaborative
- shared belief in the importance of continuous professional growth
- norms of mutual support
- belief in providing honest, candid feedback to ones' colleagues
- informal sharing of ideas and materials
- repect for colleagues' ideas
- support for risk taking
- encouragement for open discussion of difficulties
- shared celebration of successes
- all students valued regardless of their needs
- commitment to helping students

School Structure
- open and inclusive decision-making processes
- distribution of decision-making authority to school committees
- decisions by consensus
- small size of school
- team teaching arrangements
- brief weekly planning meetings
- frequent problem-solving sessions among sub groups of staff
- regularly scheduled pro-d time in school
- arrangements of physical space to facilitate team teaching
- freedom to test new strategies within teacher's own classroom
- common preparation periods for teachers needing time to work together
- cross-department appointment of teachers

School Strategies
- use of a systematic strategy for school goal setting involving students, parents and staff (school accreditation was an oft cited context for this)
- development of school growth plans
- development of individual growth plans which reflect school growth plans
- establishment of a restricted, manageable numbers of priorities for action
- periodic review and revision of school goals and priorities
- encouragement for observing one another's classroom practices
- well designed processes for implementing specific program initiatives, including processes to ensure follow through

Policy and Resources
- sufficient resources to support essential pro-d
- using colleagues within one's own school as resources for pro-d
- availability of a professional library and professional readings circulated among staff
- availability of curriculum resources and computer facilities
- access to technical assistance for implementing new practices
- access to community facilities

Table 3

Learning Processes

Collective Learning Processes

- frequent, informal discussions of ideas and teaching strategies
- experimentation with new practice
- celebration of successful new practice and joint problem solving of failures
- joint work to plan new approaches to lessons/units
- drop into colleagues' classes to share ideas or seek information
- observe each others' practice and exchange feedback on observations
- demonstrate new strategies in areas of expertise
- use staff meetings as an opportunity to practise instructional strategies
- reflect on personal/school goals and growth plans with colleagues
- use professional reading to stimulate collective reflection on current practice
- research information/strategies and share with staff
- share workshop learning with colleagues and engage in joint followup
- observe new practice in other schools
- learn from teacher interns

Individual Learning Processes

- reflect on personal and professional experience
- experiment with new strategies
- question own philosophy and investigate alternatives
- learn from family and/or colleagues in other schools
- seek help from expert colleague
- use professional reading to stimulate own growth
- draw on previous experience in other settings
- research theories and practice in professional library
- seek help from district staff

Table 4

Teacher Reported Outcomes of Organizational Learning: Number of Teachers and Schools

	Teachers	*Schools*
New Understanding of:		
• why/how to meet individual needs/whole child	16	5
• which current approaches worked and which did not	11	5
• various options for instructional approaches	8	4
• how different students learn	7	3
• why/how instructional approaches need to change	7	5
• how to relate to students of different cultures	5	2
• how a new program/instructional approach is better for students	5	3
• how goals/vision helped focus work	3	3
• what influences students	2	2
• (unspecified understanding)	4	3
Acquisition of New Skills that:		
• improved teaching (unspecified skill)	8	4
• provided smoother, more efficient classroom management	5	3
• facilitated computer use for classroom	4	2
• improved techniques with special needs students	2	2
Increased Commitment because:		
• student learning (more exciting/authentic) was enhanced	16	6
• desire to keep growing professionally	8	5
• want to do the best possible job	7	4
• new practice/program was better than old	7	4
• change and risk taking was exciting, liked to try new things	7	5
• felt empowered as a professional	7	5
• excited to be part of this school	5	4
• liked involvement with parents	4	1
• excited by school goals/vision	3	1
• enjoy teaching	3	3
• excited by a new idea	3	2
• bonded closer as professionals	1	1
New Practice:		
• implementing new (unspecified) practices, updating practice	29	6
• cooperative learning	19	6
• involve students more actively in their learning	16	6
• addressing the whole student, meeting all needs (e.g., self esteem)	10	3
• more individualization, teaching to meet individual needs	9	6
• student project work, group work	9	4
• greater flexibility, more open-ended	8	4
• new evaluation strategies (e.g., anecdotal reports, student-led conf.)	8	5
• inclusion of special needs students	7	3
• manipulation of materials/problem solving in mathematics	7	3
• more authentic learning experiences	6	2
• working with partner/cooperative planning	5	4
• subject integration/themes	5	3
• whole language/process writing	5	2
• critical thinking skills and problem solving	5	2
• use of community resources	3	3
• more technology	3	2
• new student groupings (multi-age, grade groupings)	3	2

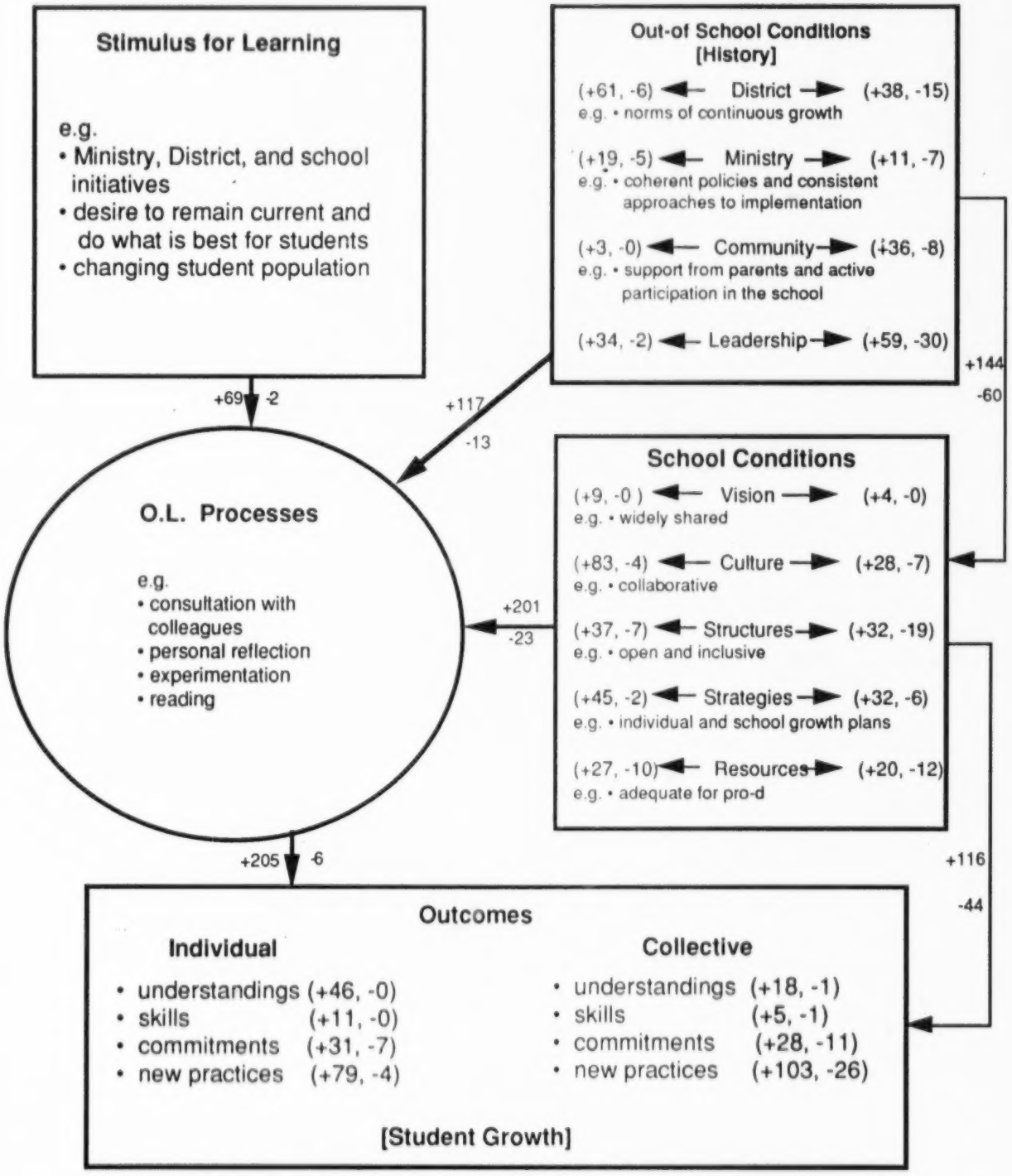

Figure 1: Summary of results concerning the nature, causes and consequences of organizational learning in schools